REMARKS/ARGUMENT

In the Office Action, the Examiner noted that claims 1-20 are pending in the application and that claims 1-20 are rejected

Claims 1-20 remain pending in this application.

The Examiner has stated that the declaration is defective for failure to identify the mailing or post office address of each inventor. A supplemental declaration is provided herewith on separate letter in accordance with 37 C.F.R. §1.67 to obviate any defect, and to advance the instant application to allowance.

Rejections Under 35 U.S.C., §103

Claims 1, 5, 6, and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over *U.S. Patent No. 5,974,396 to Anderson et al.*, in view of *U.S. Patent No. 5,956,693 to Geerlings.*

Claims 2-4 and 12-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over *U.S. Patent No. 5,974,396 to Anderson et al.*, in view of *U.S. Patent No. 5,956,693 to Geerlings*, in further view of *U.S. Patent No. 6,128,624 to Papierniak et al.*

Claims 7-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over *U.S. Patent No. 5,974,396 to Anderson et al.*, in view of *U.S. Patent No. 5,956,693 to Geerlings*, in further view of *U.S. Patent No. 5,907,831 to Lotvin et al.*

The Examiner's rejections are respectfully traversed, and withdrawal of these rejections is respectfully requested.

Claim 1 recites a customer profiling apparatus for conducting customer behavior pattern analysis, comprising processing circuitry operative to process customer records, a data warehouse coupled with the processing circuitry and configured to store the processed customer records, a profiling engine communicating with the data warehouse and operative to build and update customer behavior profiles by mining the customer records that flow into the data warehouse, and at least one computer program, performed by the profiling engine, and operative to define behavior profiles as data cubes and derive similarity measures on patterns extracted from the behavior profiles.

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Amendment A

The reference to Anderson et al. fails to teach or suggest a computer program, performed by a profiling engine, and operative to define behavior profiles as data cubes and derive similarity measures on patterns extracted from the behavior profiles, as recited in claim 1 of the instant application.

The Examiner has admitted that Anderson et al. fails to teach or suggest the deriving of similarity measures on patterns extracted from the behavior profiles (p. 3 of the Office Action), as recited, in varying language, in claim 1 of the instant application. However, the Examiner alleges that the reference to Geerlings will cure this deficiency. This in not the case, however, as Geerlings fails to teach or suggest a computer program, performed by a profiling engine, and operative to define behavior profiles as data cubes and derive similarity measures on patterns extracted from the behavior profiles.

The Examiner is referred to MPEP §2142 which recites, in part:

> To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

However, to establish a *prima facie* case of obviousness, a more thorough list of elements should be recited. More particularly, the Examiner must provide: 1) one or more references, 2) that were available to the inventor and, 3) that teach, 4) a suggestion to combine or modify the references, 5) the combination or modification of which would appear to be sufficient to have made the claimed invention obvious to one or ordinary skill in the art. Here, all the elements have not been provided.

In fact, both of the respective references to Anderson et al. and to Geerlings are completely devoid of any mention of "similarity measures", or of "data cubes", or any of their equivalents, in any context. Therefore, there is no way that the Anderson et al. reference or the Greerlings reference can teach or suggest the combining of

elements selectively extracted from either reference, as required by MPEP §2142, to result in the invention as positively recite in claim 1, as the elements just described are missing from both references.

The reference to Anderson et al. is directed to a system for gathering and analyzing customer and purchasing information, in which consumers are "similarly grouped into consumer clusters based on common consumer demographics and other characteristics" (Abstract of Anderson et al.). This refers to clustering customer data such that several (possibly thousands) of customers can be grouped by virtue of some common aspect. Clearly, this is not the same as deriving similarity measures on patterns extracted from the behavior profiles, as recited in claim 1 of the instant application, which refers to determining the behavior profile of individual customers.

Therefore, the reference to Anderson et al. is directed to solving a different problem than that of the instant application.

Furthermore, the reference to Geerlings is directed to a computer system in which "each merchant customer is grouped into an initial grouping or entry segment,...", and then provides for "further filtering of a group of target customers to a final recipient group..." (Abstract of Geerlings). As in the case of Anderson et al, Geerlings refers to grouping customers such that common aspects between individuals may be clustered for common exploitation. Again, this is not the same as the determination of a profile of individual customer behavior, as called for in claim 1 of the instant application. Therefore, the Geerlings reference is directed to addressing a different problem than that of the instant application.

In the present case, the Examiner has impermissibly applied hindsight when analyzing the patentability of claims pursuant to §103. The Examiner is required to cast the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art guided only by the prior art references and the then accepted wisdom in the field. (See *In re Dembiczak*, 50 USPQ 2d 1614, 1616-17 (Fed. Cir. 1999) (quotations omitted).

Accordingly, the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. (See *Dembiczak*, 175 F.3d at 999, 50 USPQ 2d at

1617.) Here, the Examiner has pieced together the prior art to defeat patentability of the present invention by combining prior art references without evidence of such a suggestion, teaching, or motivation. This provides the essence of hindsight. Although the suggestion to combine references may flow from the nature of the problem, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ 2d 1626, 1630 (Fed. Cir. 1996), "defining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness," *Monarch Knitting Mach. Corp. v. Sulzer Morat Gmbh*, 139 F.3d 877, 880, 45 USPQ 2d 1977, 1981 (Fed. Cir. 1998). Here, the Examiner has exercised improper hindsight analysis.

The present case law makes it clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. The Examiner has not made this showing. (See *In re Dembiczak, supra.*)

For these reasons at least, claim 1 is allowable.

As claims 5 and 6 depend from claim 1, they too are allowable.

Claims 2-4 and 7-10 depend from, and therefore include, the same features as claim 1, in addition to their respective features and distinctions. The reference to Papierniak et al. fails to cure the deficiencies of either of the respective references to Anderson et al. or Geerlings, as the reference to Papierniak et al. fails to teach or suggest a computer program, performed by a profiling engine, and operative to define behavior profiles as data cubes and derive similarity measures on patterns extracted from the behavior profiles, as positively recited in claim 1 of the instant invention.

Therefore, there is not teaching or suggestion in Papierniak et al. to selectively combine elements from Anderson et al. and Greelings, and then somehow to combine that combination with other selective elements from Papierniak et al., to arrive at the invention as recited in claim 1 of the instant application.

The reference to Papierniak et al. is directed to the gathering and analysis of data related to visitor accessing of sites posted on the Internet and the World Wide Web (Summary of the Invention). As in the cases of Anderson et al. and Geerlings, this is not the same as profiling of individual customer behavior - rather, it is directed to

determining which web-accessible resources are most frequently utilized and why. Therefore, there is no suggestion or motivation in Papierniak et al. directed toward profiling individual customer behaviors when the determination of the aggregate behavior of numerous site visitors is the goal of the Papierniak et al. reference.

For these reasons at least, claims 2-4 are allowable.

Further still, the reference to Lotvin et al. fails to cure the deficiencies of either Anderson et al., or Geerlings, as Lotvin et al. fails to teach or suggest a computer program, performed by a profiling engine, and operative to define behavior profiles as data cubes and derive similarity measures on patterns extracted from the behavior profiles.

Therefore, there is not teaching or suggestion in Lotvin et al. to selectively combine elements from Anderson et al. and Greelings, and then somehow to combine that combination with other selective elements from Lotvin et al., to arrive at the invention as recited in claim 1 of the instant application.

The reference to Lotvin et al. is directed toward a computer apparatus and method for providing educational material to a child by way of a computer network, and for providing an achievement incentive to the child in the form of points redeemable for goods and services (Abstract of Lotvin et al.). This is not the same determining the behavior profiles of customers, which is the focus of claim 1 of the instant application.

Therefore, claims 7-10 are allowable.

Claim 11 recites a profiling apparatus comprising a data warehouse for storing customer records, a profiling engine communicating with the data warehouse and operative to generate customer behavior profiles from the customer records within the data warehouse, and a computer application program implemented on the profiling engine and operative to represent behavior profiles as patterns and derive similarity measures of the patterns usable to profile customer behavior.

The reference to Anderson et al. fails to teach or suggest a computer application program implemented on the profiling engine and operative to represent behavior profiles as patterns and derive similarity measures of the patterns usable to profile customer behavior, as positively recited in claim 11 of the instant application.

The reference to Greelings fails to cure the deficiencies of Anderson et al., as the reference to Greelings fails to teach or suggest a computer application program implemented on the profiling engine and operative to represent behavior profiles as patterns and derive similarity measures of the patterns usable to profile customer behavior.

Therefore, there is no teaching, suggestion, or provision of elements as required by MPEP §2142, in either of the respective references to Anderson et al. or Greelings to arrive at the invention as recited by claim 11 of the instant application.

For these reasons at least, claim 11 is allowable.

What's more, the reference to Papierniak et al. fails to teach or suggest a computer application program implemented on the profiling engine and operative to represent behavior profiles as patterns and derive similarity measures of the patterns usable to profile customer behavior. In fact, there is no teaching of "similarity measures" of their equivalents anywhere within the reference to Papierniak et al.

Therefore, as claims 12-16 depend on claim 11, they too are allowable.

Claim 17 recites a method for comparing customer behavior patterns, comprising providing call data in the form of call data records to a data warehouse, loading the call data records into an OLAP server, generating a profile-snapshot cube accommodating multiple customers, in combination with generating the profile-snapshot cube, generating a profile cube for the same set of customers from the data warehouse, updating the profile cube by merging the profile cube with the profile-snapshot cube, and storing the updated profile cube in the data warehouse.

Anderson et al. fail to teach or suggest generating a profile-snapshot cube accommodating multiple customers, is positively recited in claim 17. Greelings also fails to teach or suggest generating a profile-snapshot cube accommodating multiple customers. Therefore, there is no teaching or suggestion in either of the respective references to Anderson et al. or Greelings, as required by MPEP §2142, to selectively combine elements from either of these reference to arrive at the invention as recited in claim 17 of the instant application.

Furthermore, the reference to Papierniak et al. fails to cure the deficiencies of either Anderson et al. or Greelings, as the reference to Papierniak et al. fails to teach

or suggest generating a profile-snapshot cube accommodating multiple customers, as positively recited in combination with the other features of claim 17 of the instant application.

As a result, there is no teaching or suggestion in Papierniak et al. to selectively combine elements taken from Anderson et al. or Greelings, and then to somehow combine that combination with other elements selectively extracted from Papierniak et al. to arrive at the invention as recited in claim 17 of the instant application.

For these reasons at least, claim 17 is allowable.

As claims 18-20 depend on claim 17, they too are allowable.

The Examiner has given Official Notice in regard to merging a profile cube with a profile-snapshot cube (pgs. 3, 5 and 7 of Office Action). Affidavit in support of the Examiner's Official Notice is hereby requested in accordance with 37 C.F.R. §1.104(d)(2).
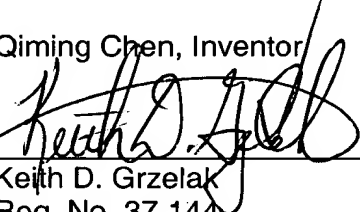
CONCLUSION

For all the reasons advanced above, Applicant respectfully submits that the application is in condition for allowance, and action to that end is respectfully requested. If the Examiner's next anticipated action is to be anything other than a Notice of Allowance, the undersigned respectfully requests a telephone interview before issuance of any such subsequent action.

Respectfully submitted,

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PATENT APPLICATION
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INVENTOR(S): Qiming Chen et al.

SERIAL NO.: 09/464,311   **GROUP ART UNIT:** 2163

FILED: December 15, 1999   **EXAMINER:** Akiba Robinson Boyce

SUBJECT: "Customer Profiling Apparatus For Conducting Customer Behavior Pattern Analysis, And Method For Comparing Customer Behavior Patterns"

VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN RESPONSE TO OFFICE ACTION DATED MARCH 13, 2002

In the Claims:

No Changes.

- END OF DOCUMENT -

S/N: 09/464,311
Case: 10991149-1
Amendment A